

Applicati n No.: 09/820,077
Amendment dated: June 2, 2003
Reply to Office Action f: March 4, 2003

MAT-8117US

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Previously Amended) A diversity wireless device for providing diversity using a plurality of antennas comprising:

a substrate;

a ground plane disposed on said substrate;

at least one grounded antenna by being disposed on said ground plane;

at least one ungrounded antenna disposed on said substrate, said ungrounded antenna isolated from said grounded antenna and isolated from said ground plane, whereby said grounded antenna and said ungrounded antenna provide a diversity gain relative to signals received by said diversity wireless device.

Claim 2. (Previously Amended) The diversity wireless device as described in Claim 1 wherein

said ground plane is placed in proximity to said ungrounded antenna and said ungrounded antenna communicates with said ground plane via high-frequency waves.

Claim 3. (Previously Amended) The diversity wireless device as described in Claim 1 wherein

an angle between said grounded antenna and said ungrounded antenna is established at 90°.

Claim 4. (Previously Amended) The diversity wireless device as described in Claim 2 wherein

an angle between said grounded antenna and said ungrounded antenna is established at 90°.

Claim 5. (Previously Amended) A diversity wireless device for providing diversity using a plurality of ungrounded antennas wherein

Application No.: 09/820,077
Amendment dated: June 2, 2003
Reply to Office Action of: March 4, 2003

MAT-8117US

a ground plane is placed in proximity to at least one of said ungrounded antennas, said at least one of said ungrounded antennas is isolated from said ground plane, and said at least one of said ungrounded antennas communicates with said ground plane via high-frequency waves.

Claim 6. (Currently Amended) The diversity wireless device as described in Claim 5 wherein

~~elements of said grounded antenna and said ungrounded antenna are symmetrical and an angle between said ungrounded antennas is established at 90°.~~

Claim 7 (Cancelled).

Claim 8. (Currently Amended) ~~The diversity wireless device as described in Claim 7~~ A diversity wireless device for providing diversity using a plurality of antennas wherein

a ground plane is disposed on a substrate;

at least one ungrounded antenna is provided and is isolated from said ground plane, said ground plane is placed partly surrounding said ungrounded antenna, and said ungrounded antenna and said ground plane communicate with each other via high-frequency waves;

wherein said ground plane is composed of a plurality of laminated layers and is placed so as to partly surround said ungrounded antenna three-dimensionally, and said ungrounded antenna and said ground plane communicate with each other via high-frequency waves.

Claim 9. (Previously Amended) A wireless terminal unit having first and second antenna elements, each of said antenna elements including:

- (a) a substrate;
- (b) a ground plane disposed on said substrate;
- (c) a first conductor section substantially in parallel to said substrate; and

Applicati n N .: 09/820,077
Amendment dated: June 2, 2003
Reply t Office Acti n f: March 4, 2003

MAT-8117US

(d) a second conductor section successively formed from said first conductor section and angularly arranged relative to said substrate,

wherein at least one of said first conductor section and said second conductor section is isolated from said ground plane.

Claim 10. (Original) The wireless terminal unit as described in Claim 9 wherein

said first conductor section has a feed terminal; and

said second conductor section is structured so as to be inclined in the direction away from said feed terminal, said inclination being such that the space between said second conductor section and said substrate reduces in the direction away from said feed terminal.

Claim 11. (Original) The wireless terminal unit as described in Claim 10 wherein

said unit is structured to have two said antenna elements and provide diversity using said two antenna elements, and said elements are configured substantially laterally symmetrical with respect to a longitudinal axis of the unit.

Claim 12. (Previously Amended) The wireless terminal unit as described in Claim 10 comprising:

at least a first and a second said antenna elements provided in said unit and a connector with a switch for connecting to an external antenna

wherein said unit is structured so as to switch said first of said antenna elements in said unit to said external antenna and to provide diversity using said external antenna and said second antenna element when said external antenna is connected to said connector.

Claim 13. (Previously Amended) The wireless terminal unit as described in Claim 11 wherein

said antenna elements are ungrounded, the ground plane is placed in proximity to at least one of said ungrounded antenna elements, and said ungrounded antenna communicates with said ground plane via high-frequency waves.

Applicati n N .: 09/820,077
Amendment dated: June 2, 2003
Reply t Office Acti n f: March 4, 2003

MAT-8117US

Claim 14. (Previously Amended) The wireless terminal unit as described in Claim 12 wherein

said antenna elements are ungrounded, the ground plane is placed in proximity to at least one of said ungrounded antenna elements, and said ungrounded antenna communicates with said ground plane via high-frequency waves.
